

Gas Properties Activity  
AP Physics

17 Points Total

Instructions:

1. Go to [phet.colorado.edu](https://phet.colorado.edu), and find the simulation “Gas Properties.”
2. Movable items:
  - a. The left wall.
  - b. The lid.
  - c. The slider to add or remove heat.
  - d. The pump.
3. Follow the rubric and answer the question.

Questions and Rubric:

1. What is the highest temperature of the heavy species that you can create with the lid staying on the box? (2 points; minimum of three attempts)
2. What is the highest temperature of the light species that you can create with the lid staying on the box? (2 points; minimum of three attempts)
3. What is the highest number of heavy species that you can have in the box with the lid staying on the box? (2 points; minimum of three attempts)
4. What is the highest number of light species that you can have in the box with the lid staying on the box? (2 points; minimum of three attempts)
5. What happens to the pressure and temperature when the left wall is moved to the right quickly? When the left wall is moved to the right slowly? (4 points)
6. What combination of volume, temperature, and number of particles will give a pressure of 3.00 Atm? (3 points; minimum of three attempts)
7. How are volume, number of particles, temperature, and pressure related? (2 points)